

CLEAN VERSION OF AMENDED ABSTRACT

--Method and apparatus of data transmission in a cellular communication system which can increase the efficiency of the information signal transmission in the downlink and, thus, maximize the information signal reception quality at the mobile station. The solution can also reduce the feedback channel (from mobile to base station) load. The apparatus operates along with the base station and provides M diversity groups of transmission channels, each group having K transmission channels. Each group of transmission channels is an independent adaptive antenna array with multiple antenna elements, each connected with the respective signal control components, which can ensure correction of the spectrum of the transmitted information signal copies, transmitting the information signal copies from each adaptive antenna array in each efficient transmission direction for transmit diversity, a combination of these two estimates and estimation of efficient transmission directions in the downlink using the received feedback signal. --